U.S. Military Academy - East Academic Building (Bartlett Hall) HABS No. NY-5708-25
Between Thayer Road and Cullum Road just north of Brewerton Road
U.S. Military Academy
West Point
Orange County
New York

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Buildings Survey
National Park Service
Department of the Interior
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HABS No. NY-5708-25
U.S.M.A. No. 753

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HISTORIC AMERICAN BUILDINGS SURVEY
U.S. MILITARY ACADEMY - EAST ACADEMIC BUILDING
(BARTLETT HALL)

LOCATION: Between Thayer Road and Cullum Road just north of Brewerton Road, U.S. Military Academy, West Point, Orange County, New York.

USGS, West Point Quadrangle, Universal Transverse Mercator Coordinates: 18.587270.4582440.

PRESENT OWNER AND OCCUPANT: U. S. Military Academy, Department of the Army.

PRESENT USE: Academic building.

SIGNIFICANCE: The East Academic Building was the first twentieth-century classroom building at West Point. Designed by Cram, Goodhue and Ferguson, with a later addition by Paul P. Cret, the building greatly increased the density of the neo-gothic core in the Academy's Academic Area.

PART I. HISTORICAL INFORMATION

A. Physical History:

1. Date of erection: 1911-13. Addition 1936.

2. Architect: Cram, Goodhue and Ferguson, Architects, Boston and New York. Addition: Paul P. Cret, Philadelphia.

3. Original and subsequent owners: U.S. Military Academy, Department of the Army.

4. Builders: McClinton-Marshall Construction Company, Pottstown, Pennsylvania, builders. Major B. T. Clayton, Quartermaster in charge of construction.

5. Original plans and construction: Original working drawings are in the possession of the Facilities Engineer, Directorate of Engineering and Housing, U.S. Military Academy. These drawings are ink on linen with subsequent drawings on paper. Original drawings were used in some cases for later alterations, resulting in the erasure of many details.

As originally constructed, the East Academic Building was a rectangularly shaped building 78'-8" (N-S) x 292'-0" (E-W) with a 67'-10" wide southern ell extending 79'-10" to the east. On the north end of its east elevation the building was attached to the pre-existing library by a 41'-4" x 48'-10" connection. The building's roof was covered with copper and contained skylights, ventilation monitors and an observatory gallery with a telescope dome.

Just as it connected to the library to the east, the building was meant to be connected to the West Academic Building via a memorial bridge across Thayer Road. This was shown in drawings as a two story bridge at the second and third floor level of the north pavilion on the west elevation. The area between these buildings had been intended as a mall. This plan was never carried out.

The most thoroughly altered interior space is the north section of the first floor. Like the large open Electrical Laboratory occupying the south pavilion, the north pavilion was designed as a 64'-2" x 72'-4" open space housing the Geological and Mineralogical Cabinet. Centered in the room were four octagonal stone columns on-axis with both the principal longitudinal passage and with the entrance to the Map Room to the east. The latter was 38'-0" x 34'-8" skylighted, groin-vaulted room connecting the East Academic Building with the library to the east. Callery level bookshelves lined the room, which was entered through columns in-antis flanked by a wrought iron screen.

The same north pavilion space on the second and third floors was originally more open than its present form, with a swinging pendulum hung between the third and fourth floors. This pendulum was hung from the intersecting barrel vault of the fourth floor's north pavilion. Section rooms, corridors and laboratories had higher ceilings with groin vaults decorating the axial entry lobby and the sides of the Electrical Laboratory. Passages were decorated by barrel vaults, arches and floors of green slate and quarry tile. On the upper floors of the south pavilion was the chemistry lecture room with amphitheater seating and an exposed beam ceiling. Skylights provided light for all major rooms on the fourth floor.

Before the 1936 addition a small two room wing off the Chemistry Laboratory extended to the north.

6. Alterations and additions: In 1936 the East Academic Building was substantially enlarged with an addition by Paul P. Cret of Philadelphia. This addition, connected to the main building just north of the one story Chemistry Laboratory, extends east from the south passage and then turns north, parallel to Cullum Road, until it adjoins the new library (U.S.M.A. No. 757). Because of a grade difference, the east elevation consists of five full floors above a basement and sub-basement. The south tower of the addition contains a penthouse floor while the north tower contains a full height sixth floor. Cret's work also included a Natural and Experimental Philosphy Laboratory which occupies an above grade basement level just east of the main block; the roof of this section serves as a terrace with flush, glassblock skylights.

Besides Cret's addition, alterations in the 1930s included concrete underpinning for the north and south pavilion in 1936 and new seats for the Philosophy and Chemistry Lecture rooms on the fourth and second floors in 1936 and 1939 respectively.

Alterations in the 1940s began with new laboratories created in the sub-basement (1943) and the fifth floor penthouse (1943), and a storage room alteration in the Chemistry Laboratory (1943). Drawings dated 1943 indicate that the north pavilion wing of the second floor has been altered with partitions but other spaces, with the exception of those mentioned above, were unaltered. A proposal for partitioning the arched openings between the first floor Chemistry and Electrical Laboratories in 1943 was executed the following year with display cabinets below glass blocks and a door with glass block sidelights and etched glass panels reused from the 1939 World's Fair (see HABS photographs). Drawing from the firm of York and Sawyer dated 1944, entitled "Improvements to Lighting of Barrack and Academic Buildings," indicate a change from incandescent to flourescent lights in the older part of the building although subsequent drawings refer to this change taking place in 1953; a similar change was made to the addition in 1949. Changes to laboratories and storerooms in 1945 included new panels, shelves and cabinets. In the same year, the Examination Room of the third floor was altered with partitions and the removal of the pendulum suspended through the ceiling from the fourth floor; the octagonal floor opening for the pendulum was filled at this time.

Changes made in the 1950s include the placement of accoustical tile in the basement's north pump room (1953); the rehabilitation of the Hydraulics Laboratory (1954); and new lights and accoustical tile for the Electrical Laboratory (1956).

The 1960s decade was one in which many alterations to the building took place. New York architect Louis Gardner carried out the most extensive of these beginning in 1963. These alterations, which substantially affected the original character of the interior, include the following: the removal of wainscoting, doors, transoms, arches, stone piers, columns, partitions, wood floors, handrails, skylights; the placement of new partitions, dropped ceilings, new toilets, new radiators, and the covering of skylights and the copper roof. In addition to replaced and blocked basement and sub-basement louvered windows, new grilled vents replaced certain casement windows and additional vents were cut into the walls on all elevations. Ceilings were removed or dropped in the Chemistry and Electrical Laboratories and lecture rooms were refinished on all floors. In the fourth floor lecture hall all the windows were blocked-up. Casement windows in the Chemistry Laboratory were replaced with "tinted cathedral glass with leaded joints." Doors and transoms were replaced on the west elevation and block anodized aluminum letters spelling "Bartlett Hall" were placed on the transom lights over the west central door.

Vinyl-aspestos tiles replaced the wooden parquet floor in the addition in 1966 and in 1967 windows in the original building were either replaced with bronze-finished aluminum or painted a bronze color. By 1963 the Library's Moore Wing had been constructed on top of the Natural and Experimental Philosophy Laboratory in the courtyard east of the main block.

Louis Gardner again made changes in 1971 (record date 1973) which included the removal of some original fabric on the interior and the installation of new lighting. Glass and metal skylight caps were replaced by plywood and the copper roof was covered with "elastomeric" sheet roofing in 1972. In 1974 a connecting link from the main block to the Moore Wing was demolished and the east door removed and blocked-up.

Alterations in 1980 included modifications for radiation safety in the acceleration room of the basement.

An exterior wrought iron balcony on the fourth floor was removed at an unknown date.

B. Historical Context:

For the historical and architectural context of this building within the overall development of the Academy see HABS No. NY-5708, Volume 2: "West Point: An Overview of the History and Physical Development of the United States Military Academy."

PART II. ARCHITECTURAL INFORMATION

A. General Statement:

1. Architectural character: In terms of materials and details, the East Academic Building is very much in character with Cram, Goodhue and Ferguson's neo-gothic work at West Point. However, the symmetrical facade, especially next to the asymmetrical massing of the Headquarters Building to the south, is uncommon in their ensemble of buildings.

2. Condition of fabric: The East Academic Building is in excellent condition.

B. Description of Exterior:

1. Over-all dimensions: The basic plan form of the building can best be described in its present state as a "U" with an obtuse east arm; the "open" north end adjoins the Library, resulting in an enclosed exterior courtyard. The dimensions of the building, as taken from original drawings, are: west elevation (facade) 292'-0"; south elevation 158'-6"; east elevation (Cret addition) 213'-2"; and north 78'-8".

The original section of the building is four stories high above a basement. The northwest corner of the building at the roof parapet is approximately 71'-0" above finished grade (elevation 157'-6"). The addition is four floors above a full basement with a sub-basement on the southern end and one and two additional floors in the south and north towers respectively. The top of the southeast tower is approximately 101' above finished grade (elevation 231'-7") while the northeast tower is approximately 104'-2" above finished grade (elevation 145'-2").

2. Foundations: The foundations of the original structure are composed of rubble stone (1'-8" - 2'-6") on reinforced concrete footings (5'-0" - 6'-8"). Up to the watertable the wall is stone with an interior face of brick. Cret's addition has concrete footings (10" - 1'-8") and with an exterior stone faced with brick on the interior to the watertable. The foundation and footings for the addition were by Gravel and Duncan with Sandlass, Wieman and Doelman, associate engineers, Philadelphia. Kittanning Brick was used for the basement and sub-basement interior walls in the addition.

   Drawings indicate that the Map Room and Electrical Laboratory wings were underpinned with concrete in 1936.

3. Walls: The exterior walls have a skin of rock-faced granite laid in a random range ashlar pattern. There is a slight color difference between the gray granite of the original section and the brown-tinted granite of the addition. Limestone is used for window and door jambs, mullions, spandrels, lintels, sills, arches, the watertable, the beltcourse, the cornice, buttresses, coping, embrasures and sculptured bosses. Limestone pilasters, which rise above the parapet over the buttress piers on the original building, are topped with carved limestone shields. The cornice, and spandrels on the west elevation, are also decorated with limestone bosses. Besides decorative elements at doorways, other decorative trim on the original building includes sculptured shields on the east elevation with iconographic symbols representing academic and scientific fields, and a sculptured eagle above the U.S.M.A. crest near the top of the southeast corner tower.

4. Structural systems, framing: The East Academic Building is a steel and concrete structural system with a stone exterior/brick interior veneer; it has reinforced concrete floors, concrete-encased I-beams, limestone arches, Gustavino vaults and a steel truss roof framing covered with concrete. The addition has a similar system.

5. Openings:

   a. Doorways and doors: West Elevation: Three doorways provide entrance to the first floor on the facade. The central doorway is flanked by secondary doorways which symmetrically separate the end pavilions from the central block. The central doorway is designed as a slightly projecting porch whose refined limestone details culminate over the door in a compound arch and a sculptured relief of an eagle with the U.S.M.A. crest.

Superimposed on the crest are four additional shields making inconographic references to the instruction taught within (see HABS photographs of the doorways). The north doorway is much simpler, since it was originally intended to be under an arched bridge (see HABS photographs). The facade's south doorway is more elaborate than the north and rivals the central doorway with its compound piers and arch, sculptural bosses and trefoil niches with a U.S.M.A. shield. Both the north and south doorways have elliptical transom windows with oak mullions; in front of these transoms is a separated open metalwork design with the letters "U.S.M.A." and the Academy emblem (see HABS photographs). The single light glass transom above the central doorway with the letters "Bartlett Hall" dates from 1963, which is when the three sets of oak board-and-batten bi-valve doors were put in place.

South Elevation: On the south there are three doorways, two of which occur at the juncture of the Chemistry Laboratory wing and provide access to the first and basement floors. The single valve doorway to the first floor is over the bi-valve basement doorway. Doors in these doorways were replaced in 1936. The present board-and-batten doors with large single light windows might even be later replacements. The third doorway on this elevation is at the sub-basement level of the laboratory wing and has a recent board-and-batten door.

On the southeast a first floor level doorway in the addition leads from the interior to a roof terrace between the south tower and the laboratory wing. This has its original 1936 board-and-batten door with a small single leaded window. Rather than a transom, there is a window right above the doorway with a wrought iron grille.

East Elevation: The east elevation of the addition contains both a basement and a sub-basement doorway. The sub-basement doorway at the base of the south tower's east elevation has a bi-valve board-and-batten door each with a single light window and three wrought iron strap hinges. Just east of the north tower a ramp leads to the basement doorway with a simple beaded bi-valve door.

Facing the Science Research Laboratory, called the Moore Wing, is the east doorway to the main block of the original building. The doors from this doorway were salvaged and their space filled with concrete block and stuccoed into panels on the exterior side; it is unknown where the doors went. A four mullion transom with a wrought iron screen is over the doorway, which also has trefoil niches and a U.S.M.A. shield in limestone over the door.

b. Windows: Original Building: In its variety, the fennestration of the East Academic Building is typical of Cram, Goodhue and Ferguson's West Point work, yet compositionally, it deviates slightly from the usual. Vertically, each floor is generally differientiated through a window type: single basement windows, triple first floor casement windows, triple casements joined by sprandrels and headed by an arch on the second and third floors, and double casements on the fourth floor. All of the windows are outward-swinging casements. Many are bronze-colored replacements dating to 1963. These new windows are described on drawings as "Cathedral glass with leaded joints." The second-fourth floor windows of the south elevation and possibly those high on the east elevation of the south pavilion appear to be original. The windows are in various sizes: 3-over-12 and 6-over-12 topfixed casements; and 6, 15 and 18 light casements. In terms of the plan, this fennestration pattern is deceiving and does not necessarily call-out similarly or differently used spaces within, as is so clearly achieved in the firm's other West Point work. A medieval-like picturesque pattern is thus lost at the expense of regularity.

1936 Addition: The windows in the addition are flat-headed, multi-lighted casements which are side-hung if in one part or with pivoting tops if in two parts. This basic type is arranged according to need from single windows to banded groups of six. The east elevation along Cullum Road is the most important of the addition and is treated as such. This elevation is between the north and the south towers, each of which has a vertical grouping of banded windows within a large arched opening. While similar arched groupings fill the east elevation between the towers, they do not have the decorative top tracery which distinguish the tower windows. Cret designed the fennestration between these towers as vertical hierarchy which rises from the sub-basement to the fourth floor in an increasing height of casement lights as well as an increasing mass of grouped casements. Besides the large elliptical arch basement windows, no attempt was made at compositional hierarchy in the courtyard elevations, all floors having similar banded casements.

6. Roof:

a. Shape, covering: The roof of the original building is a series of low, intersecting gables partially hidden behind the parapet. The original copper roof is now covered with black "elastomeric" sheet roofing. Glass and metal skylight caps are covered with plywood. Built-up roofing over concrete covers the flat roof of the addition.

b. Cornice: Only the end pavilions of the original building have a cornice. Decorating this simple limestone band with its projecting molding are figurative limestone bosses inconographically representing the building's function (see HABS photographs). In reference to these bosses, Cret designed non-figurative sculptural bosses in three alternating designs for the cornice of the addition.

c. Towers: Cret's addition features two towers, a southeast tower oriented south and a northeast tower oriented east.

C. Description of Interior:

1. Floor plans: Sub-basement: Because of the falling west-east grade, the sub-basement is confined to the southeast corner of the building and consists of eight rooms (some mechanical) accessed by doorways on the south and east.

Basement: The basement, also accessed from the south and east, is a series of small rooms devoted to mechanical functions, storage, darkrooms and laboratories. The Science Research Laboratory is the exception to the small rooms; this room was built to the east of the main block in 1936 and forms the west side of a triangular exterior court. Longitudinal passages connect the spaces.

First Floor: The first floor of the original building consists of eight section rooms in the central block divided cross-axially by the entrance stairhall and a longitudinal passage. This central section is separated from the end pavilion by the north and south stairhalls. The original single space of the north pavilion Physics Laboratory is now divided into small rooms while the south was extended east into the addition and became a central longitudinal passage dividing section rooms in the addition. Although built over the Science Research Laboratory in the courtyard, the Moore Wing is connected to, and is part of, the Library on the north rather than part of the East Academic Building.

Second and Third Floors: The second floor plan is basically similar to the first, with completely altered spaces in the north pavilion, a large two story lecture hall in the south pavilion and section rooms in the central section and in the addition. The eastward section of the first floor laboratory is one story, making the second floor of the original building only one room deep on the south.

Fourth Floor: This floor is similar to the second, having a two story lecture hall in the south pavilion. Above the south pavilion is a four room mezzanine floor.

Fifth and Sixth Floors: The fifth floor consists of three rooms in the southeast tower and a room in the northeast tower. The northeast tower also rises to include a sixth floor room.

2. Stairways: The three major stairways in the original building correspond to the three entrances of the facade. The north and south stairways are dog-leg types and the central stairway rises as two flights and returns as one to the second floor. The stairs have green slate treads, square iron ballusters with a wooden handrail, iron newel posts and wood and plaster wainscoting. The newel posts are capped with cast iron eagles supporting a cannon ball (see HABS photograph). The stairs on some floors do not have green slate treads.

   Stairways in the addition are confined to the northeast tower and the southeast tower (inside corner). These stairs in the addition are dog-leg and have treads and landings of Crab Orchard limestone.

3. Flooring: In the original section of the building the passages of the first-fourth floors retain their original green slate and granolithic floors. The basement has its original granolithic floor and the north and south pavilions of the first floor have their original quarry tile and wood floors respectively. The section rooms, however, have had their pine floors replaced with linoleum except in two third floor rooms. The north Chemistry Laboratory has a replacement floor of concrete.

   In the addition the sub-basement and basement floors are concrete but the passages, lobbies and restrooms in the rest of the building have quarry tile floors. The maple parquet floors of the section rooms and offices were replaced with vinyl-aspestos tile in 1966.

4. Wall and ceiling finish: Original Section: Walls of exposed brick are still evident in the basement except for the northeastern most room which has an exposed stone wall on its north and east sides. The dropped ceilings of this level are accoustical tile. Original wall and ceiling finishes on the first floor have been altered except for the stair halls with their oak and plaster wainscoting, plaster walls and green slate baseboards. Chairrails remain in some second and fourth floor section rooms but have been removed otherwise. Ceilings have been dropped with accoustical tile except for some section rooms and the center area of the west Chemistry Laboratory, which retains its groin vault constructed of Gustavino tiles.

   Addition: The walls and ceilings of the sub-basement are exposed construction except for the passage which is Kittaning Brick. The basement walls are Kittaning Brick in the vestibule areas but glazed terra cotta and plaster in other spaces; dropped ceilings cover an exposed construction finish. Other floors of the addition have plaster metal baseboards and either accoustical tile between concrete beams or dropped ceilings covering original hung plaster ceilings.

5. Openings:

   a. Doorways and doors: Doors have been replaced and transoms have either been removed or blocked. Just inside the central entrance of the facade a vestibule doorway with its double doors and transom survives. The vestibule opposite this on the east originally had a wrought iron screen but is now completely blocked.

The most decorative interior doorway is one between the chemistry laboratories on the first floor. These bi-valve doors, which were installed in 1944, have three etched-glass panels each designed by Harriton for the World's Fair of 1939; the other panels from this set are in the Superintendent's House. (HABS No. NY-5708-1). Class blocks form the doorway above and to each side of these laboratory doors (see HABS photograph).

b. Windows: All skylights have now been removed or covered. These had included monitor clerestory windows in the Chemistry Laboratory and Map Room wings; a double roof skylight for the fourth floor lecture hall; skylights for all the major fourth floor rooms; and flat glass block skylights for the courtyard laboratory addition.

6. Decorative features and trim: Alterations have all but eliminated both structural and applied decorative interior features. Surviving decoration includes mosiac tile in the central entrance vestibule of the facade and one arch which remains in the passage at the entrance to the fourth floor lecture hall. A more recent decorative treatment, albeit non-permanent, is a portrait of William H.C. Barflett by Robert Weir which hangs in the "Memorial Hall" created from the east entry hall.

7. Hardware: Original hardware of any special note has been removed.

8. Mechanical equipment:

a. Heating, air conditioning: Undetermined.

b. Lighting: All original light fixtures were replaced in 1952 by fluorescent lights.

c. Elevators: Two elevators with open wrought iron grilles served the original building, one in the north and one in the south passage. The south elevator was removed in 1936 to widen the connecting passage to the addition, where a new elevator was located. The north elevator has been replaced with a more modern one in the same location.

D. Site:

1. General setting and orientation: The facade of the East Academic Building faces west across Thayer Road towards the West Academic Building (HABS No. NY-5708-15). With the 1936 addition, the east elevation became a secondary facade facing Thayer Road opposite the Riding Hall (HABS No. NY-5708-23). To the south the building is narrowly separated from the Administration or Headquarters Building (HABS No. NY-5708-22) by an extension of Brewerton Road which then becomes a pedestrian bridge spanning Thayer Road. The building adjoins the library on its northeast corner and on the north end of the addition along Thayer Road, forming a mega-structure which has interior connecting corridors. This connection occurred historically as well, where the Map Room wing connected to the original library. An enclosed courtyard was created when the 1936 addition's stone wall and gate were removed and the new library built right up against the East Academic Building; the same thing happened to the Map Room wing connection.

Due to the falling grade, north-to-south and west-to-east, the east elevation of the building appears much taller than the western facade.

2. Historic landscape design: Prior to the 1936 addition, the East Academic Building had a much different visual impact. With its laboratory wing on the south and the original Library to the north, the building formed a three-sided open space which was planted with grass and had at least two tall trees. Thayer Road was originally at a much lower level and passed below the building's green backyard with its view of the Hudson River (see historic photographs in the U.S. Military Archives, USMA-6-7400-379 and an un-numbered aerial view from the 1930s). The close, dense space along Thayer Road near the East Academic Building today was created when the addition was built out near the road, which changed the setting of the building and the approach to the Plain.

PART III. SOURCES OF INFORMATION

A. Architectural Drawings: Original ink-on-linen working drawings are in the Facilities Engineer's Office, Directorate of Engineering and Housing, U.S. Military Academy. Subsequent alteration drawings are also found there.

B. Early Views: Early photographs can be found in the U.S. Military Archives and Special Collections.

C. Bibliography:

1. Primary and unpublished sources:

Records, U.S. Military Academy Archives and Special Collections. See bibliographic essay in the Lange volume of this project for a listing of record groups.

2. Secondary and published sources:

Annual Reports, U.S. Military Academy Archives.

Crashof, Bethanie C. "Building Analysis and Preservation Guidelines for Category I and Selected Category II Buildings at the United States Military Academy, West Point, New York." Historic American Buildings Survey, 1983. HABS No. NY-5708.

Lange, Robie S. "West Point: An Overview of the History and Physical Development of the United States Military Academy," Historic American Buildings Survey, 1983. HABS No. NY-5708.

D. Likely Sources Not Yet Investigated:

The records of Cram, Goodhue and Ferguson and the records of Paul Philippe Cret.

PART IV. PROJECT INFORMATION

This documentation is part of a multi-year project sponsored by the National Park Service and the United States Military Academy explained in HABS No. NY-5708, Volume I, "Methodology." This written documentation was prepared by Travis C. McDonald, Jr., architectural historian, in 1982-1985 based on field work conducted in 1982.